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Unified Model for Quark Confinement and Cosmic Expansion due to Color andCharges with Novel Symmetries YUN HAO, JONG-PING HSU, Univ of Mass - Dartmouth — Based on baryon charge conservation and a generalized Yang-Mills symmetry for Abelian (and non-Abelian) groups, we discuss a new baryonic gauge field and its linear potential for two point-like baryon charges. The force between two point-like baryons is repulsive, extremely weak and independent of distance. However, for two extended baryonic systems, we have a dominant linear force αr. Thus, only in the later stage of the cosmic evolution, when two baryonic galaxies are separated by an extremely large distance, the new repulsive baryonic force can overcome the gravitational attractive force. Such a model provides a gauge-field-theoretic understanding of the late-time accelerated cosmic expansion. The baryonic force can be tested by measuring the accelerated Wu-Doppler frequency shifts of supernovae at different distances.

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